

1.0 EXECUTIVE SUMMARY

The 2019 first quarter sampling event was conducted at Westmoreland Sanitary Landfill (WSLF) in Rostraver, Township, Pennsylvania in March 2019. The groundwater wells, leachate, and leak detection zones were sampled on March 7 and 8, 2019 and an attempt was made to sample the surface water locations on March 29, 2019. However, the surface water locations were dry and were not sampled. All samples were collected by Geochemical Testing. All groundwater samples were analyzed for Pennsylvania Department of Environmental Protection (PADEP) Form 19 parameters. Based on the analyses of the groundwater quality results from the March 2019 sampling event, the groundwater at Westmoreland Sanitary Landfill has not been impacted by a release of leachate.

The leachate and leak detection zone were sampled for PADEP Form 50 parameters. During the first quarter of 2019 the flow in the leak detection zone exceeded 100 gallons/acre/day for both LDZ-1 and LDZ-2. Civil Design Solutions will be submitting a notification of the exceedance and a plan to investigate the source of increased detection zone flow to solid waste.

Comparisons were made between the inorganic parameters detected in groundwater samples and the drinking water maximum contaminant levels (MCLs). No drinking water MCLs were exceeded for any of the inorganic constituents analyzed. It should be noted that groundwater at WSLF has been shown to be sensitive to turbidity based on historic comparisons of total and dissolved metals results. Therefore, in order to attempt to collect samples that better represent the groundwater quality, it is proposed that the yield characteristics of the groundwater monitoring wells be evaluated to determine the best purging and sampling procedures. This may include yield testing and potential rehabilitation of wells, as needed.

During the 2019 first quarter sampling event, no volatile organic compounds were detected above established reporting limits in any of the groundwater samples collected and the groundwater quality results are consistent with historical results, except for two parameters at W-3RD which were elevated due to high turbidity. During the 2019 first quarter event, turbidity

was high (314 NTU) at the time of sample collection which resulted in elevated concentrations for fluoride and iron.

2.0 INTRODUCTION

2.1 Scope and Purpose

This report summarizes the results of the 2019 first quarter groundwater monitoring activities at the WSLF. The first quarter groundwater, leachate, and leak detection zone sampling was conducted on March 7 and 8, 2019 by Geochemical Testing (GT); the first quarter surface water sampling was conducted on March 29, 2019 GT; and the first quarter report was prepared by Eagon & Associates, Inc. (Eagon), to meet the requirements of the PADEP and WSLF's municipal waste landfill Permit No. 100277.

The Groundwater Monitoring Program at WSLF incorporates permanent monitoring elements to provide environmental protection during and after landfill development. All field work, sampling methodologies, data evaluation, data QA/QC, and chemical analyses were conducted in accordance with the approved site permits.

2.2 Site Description and Background

The WSLF is located in the southwestern portion of Westmoreland County, approximately ¼-mile north of Interstate 70 and east of the Monongahela River in Rostraver Township (Figure 1). The landfill is a double-lined landfill with an older unlined disposal area. The older unlined disposal area is approximately 20 acres and it has been capped. The double-lined landfill consists of Phases I, II, and III, under permit number 100277 issued by PADEP. Cells S4/S3 through S1B have been constructed and were authorized by the July 27, 2004 permit modification. Waste disposal operations were initiated in Cell S4/S3 during the fourth quarter of 2006 and Cells S3/S2A, S2B/S1A, and S1B have been constructed to date.



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
03/26/2019

DEP USE ONLY

Date Received

FORM 50
MUNICIPAL WASTE LANDFILL
LEACHATE ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 50, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General References: Section 273.255(d) and (e) and 273.276(a)

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. SITE IDENTIFIER

Applicant/permittee Westmoreland Waste LLC

Site Name Westmoreland Waste LLC

Facility ID (as issued by DEP) 100277

SECTION B. FACILITY INFORMATION

Facility Name: Westmoreland Waste LLC

Sampling Point Identification MH-1 (LEACHATE)

Location: County Westmoreland Municipality: Rostraver Twp.

Sampling Point: Latitude: ____° ____' ____" Longitude: ____° ____' ____"

Sampling Method: ☐ Pumped ☐ Bailed ☒ Grab

Sample Field Filtered (must be 0.45 micron)? ☐ Yes ☒ No

Sample Date (mm/dd/yy) 03/08/19 Sample Collection Time: 11:55

Sample Collector's Name: Ron Benford

Sample Collector's Affiliation: Geochemical Testing

Laboratory(ies) Performing Analysis: Geochemical Testing

Laboratory Certification Number(s): 56-00306

Lab Sample Number(s): G1903473-001 Final Lab Analysis Completion Date: 03/20/2019

Were Any Holding Times Exceeded? ☐ Yes ☒ No If Yes, please explain in comments field.

Name/Affiliation of Person Who Filled Out Form Geochemical Testing

Comments:

Oil like / Sheen / Sediment - Strong odor - Brown

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

FORM 50
QUARTERLY MUNICIPAL WASTE
LANDFILL
LEACHATE ANALYSES

Monitoring Point No. MH-1 (LEACHATE)
Sample Date 03/08/19
I.D. No. 100277

For new facilities and cells as well as existing facilities which were permitted and which received waste after April 9, 1988, discharge flow volume from leachate collection shall be measured daily [273.276(a)(1)]. Discharge flow volume from the detection zone shall be estimated weekly [273.255(d)(2)]. Form 50 is due quarterly after the flow of leachate from the collection system has started. For facilities or cells which have received no waste since April 9, 1988, detection zone monitoring will meet permit/closure requirements.

FLOW FACTOR	LEACHATE DISCHARGE	DETECTION ZONE DISCHARGE
Volume (average gpd)	63032	
Area Drained (acres)	44.6	
Ratio (gallons/acre/day)	1413.3	

Once leachate flow begins from a leachate collection system, leachate discharge will be analyzed quarterly for all analytes listed below. In the leachate detection zone, any fluid found in any detection zone monitoring point must be sampled during the initial four quarters for the leachate indicator parameters (designated by *, below) to establish a baseline fluid composition. Thereafter, any fluid detected in each monitoring point in the leachate detection zone must be sampled annually for the leachate indicator parameters. Quarterly sampling of the fluid in any detection zone monitoring point for leachate indicator parameters is required only when the quarterly flow at that monitoring point exceeds 10 gallons per acre per day (weekly average for the quarter) for the cell(s) served by that monitoring point. If the indicator analytes confirm leachate contamination in the detection zone, the fluid will be analyzed initially within 30 days and thereafter annually for all analytes listed below. When MCL's (where established) of any detection zone analytes on this form are exceeded, annual groundwater monitoring must include the Subtitle D detection zone add-on list analytes found on Form 19.

ANALYTE (mg/l unless otherwise indicated)		LEACHATE DISCHARGE [†]	DETECTION ZONE DISCHARGE [†]	ANALYSIS METHOD NUMBER
1.* Alkalinity, Total	p	1780		ASTM D 1067-1
2.* Ammonia-Nitrogen	p	399		EPA 350.1
3.* Bicarbonate (as CaCO ₃)	p	1770		SM 4500-CO ₂ D
4.* Calcium, Total	p	195		EPA 200.7
5.* Chemical Oxygen Demand	p	2100		HACH 8000
6.* Chloride (Cl)	p	2140		EPA 300.0
7.* Magnesium, Total	p	135		EPA 200.7
8.* pH, Field, (Standard Units)	p	7.60		SM 4500 H+B
9.* pH, Laboratory, (Standard Units)	p	7.57		SM 4500-H+ B
10.* Potassium, Total	p	247		EPA 200.7
11.* Specific Conductance, Field (micromhos/cm)	p	9330		EPA 120.1
12.* Specific Conductance, Laboratory (micromhos/cm)	p	10800		EPA 120.1
13.* Sodium, Total	p	1320		EPA 200.7
14.* Sulfate, Total	p	132		EPA 300.0
15.* Total Organic Carbon (TOC)	p	189		SM 5310 C
16. Fluoride	p	< 1.0		EPA 300.0
17. Iron, Total	p	4.54		EPA 200.7
18. Manganese, Total	p	1.04		EPA 200.7
19. Nitrate-Nitrogen	p	2.51		EPA 353.2

[†] Please indicate detection limit if analyte is not detected.

FORM 50

Monitoring Point No. MH-1 (LEACHATE)
 Sample Date 03/08/19
 I.D. No. 100277

ANALYTE			LEACHATE DISCHARGE [†]	DETECTION ZONE DISCHARGE [†]	ANALYSIS METHOD NUMBER
20.	Phenolics, Total (mg/l)	p	0.22		EPA 420.4
21.	Total Dissolved Solids (mg/l)	p	5000		SM 2540 C
22.	Tritium (pCi/L)#				EPA 906.0
23.	Turbidity (mg/l)	p	95.0		EPA 180.1
24.	Antimony, Total (µg/l)	d	< 100		EPA 200.7
25.	Arsenic, Total (µg/l)		50		EPA 200.7
26.	Barium, Total (µg/l)		2000		EPA 200.7
27.	Beryllium, Total (µg/l)	d	< 4		EPA 200.7
28.	Cadmium, Total (µg/l)		< 5		EPA 200.7
29.	Chromium, Total (µg/l)		40		EPA 200.7
30.	Cobalt, Total (µg/l)	d	20		EPA 200.7
31.	Copper, Total (µg/l)		< 10		EPA 200.7
32.	Lead, Total (µg/l)		< 20		EPA 200.7
33.	Mercury, Total (µg/l)	p	< 0.20		SM 3112 B
34.	Nickel, Total (µg/l)	d	80		EPA 200.7
35.	Selenium, Total (µg/l)		< 20		EPA 200.7
36.	Silver, Total (µg/l)		< 10		EPA 200.7
37.	Thallium, Total (µg/l)	d	< 20		EPA 200.7
38.	Vanadium, Total (µg/l)	d	< 10		EPA 200.7
39.	Zinc, Total (µg/l)		70		EPA 200.7
40.	Acetone (µg/l)	d	< 100		EPA 8260
41.	Acrylonitrile (µg/l)	d	< 5.0		EPA 8260
42.	Benzene (µg/l)		< 5.0		EPA 8260
43.	Bromochloromethane (µg/l)	d	< 5.0		EPA 8260
44.	Bromodichloromethane (µg/l)	d	< 5.0		EPA 8260
45.	Bromoform (Tribromomethane) (µg/l)		< 5.0		EPA 8260
46.	Carbon Disulfide (µg/l)	d	< 5.0		EPA 8260
47.	Carbon Tetrachloride (µg/l)		< 5.0		EPA 8260
48.	Chlorobenzene (µg/l)		< 5.0		EPA 8260
49.	Chloroethane (Ethyl Chloride) (µg/l)		< 5.0		EPA 8260
50.	Chloroform (Trichloromethane) (µg/l)	d	< 5.0		EPA 8260
51.	3-Chloro-1-propene (µg/l)	p	< 5.0		EPA 8260
52.	Dibromochloromethane (µg/l) (Chlorodibromomethane)		< 5.0		EPA 8260
53.	1,2-Dibromo-3-chloropropane (µg/l) (DBCP)	d	< 5.0		EPA 8260
54.	1,2-Dibromoethane (µg/l) (Ethylene dibromide; EDB)		< 5.0		EPA 8260
55.	1,2-Dichlorobenzene (µg/l) (o-Dichlorobenzene)		< 5.0		EPA 8260
56.	1,3-Dichlorobenzene (µg/l) (m-Dichlorobenzene)	p	< 5.0		EPA 8260

[†] Please indicate detection limit if analyte is not detected.

FORM 50

Monitoring Point No. MH-1 (LEACHATE)
 Sample Date 03/08/19
 I.D. No. 100277

ANALYTE (µg/l)	LEACHATE DISCHARGE†	DETECTION ZONE DISCHARGE†	ANALYSIS METHOD NUMBER
57. 1,4-Dichlorobenzene (p-Dichlorobenzene)	< 5.0		EPA 8260
58. trans-1,4-Dichloro-2-butene d	< 5.0		EPA 8260
59. Dichlorodifluoromethane p	< 5.0		EPA 8260
60. 1,1-Dichloroethane (Ethylidene chloride)	< 5.0		EPA 8260
61. 1,2-Dichloroethane (Ethylene dichloride)	< 5.0		EPA 8260
62. 1,1-Dichloroethene (Vinylidene chloride)	< 5.0		EPA 8260
63. cis-1,2-Dichloroethene	< 5.0		EPA 8260
64. trans-1,2-Dichloroethene	< 5.0		EPA 8260
65. 1,2-Dichloropropane (Propylene dichloride)	< 5.0		EPA 8260
66. cis-1,3-Dichloropropene	< 5.0		EPA 8260
67. trans-1,3-Dichloropropene	< 5.0		EPA 8260
68. Ethyl Benzene	< 5.0		EPA 8260
69. Methyl butyl ketone (2-Hexanone) d	< 5.0		EPA 8260
70. Methyl bromide (Bromomethane)	< 5.0		EPA 8260
71. Methyl chloride (Chloromethane)	< 5.0		EPA 8260
72. Methylene bromide (Dibromomethane) d	< 5.0		EPA 8260
73. Methylene chloride (Dichloromethane)	< 5.0		EPA 8260
74. Methyl ethyl ketone (MEK; 2-Butanone)	< 5.0		EPA 8260
75. Methyl iodide (Iodomethane) d	< 5.0		EPA 8260
76. 4-Methyl-2-pentanone (Methyl isobutyl ketone)	< 5.0		EPA 8260
77. Styrene d	< 5.0		EPA 8260
78. 1,1,2,2-Tetrachloroethane	< 5.0		EPA 8260
79. 1,1,1,2-Tetrachloroethane	< 5.0		EPA 8260
80. Tetrachloroethene (Perchloroethylene)	< 5.0		EPA 8260
81. Toluene	< 5.0		EPA 8260
82. 1,1,1-Trichloroethane (Methylchloroform)	< 5.0		EPA 8260
83. 1,1,2-Trichloroethane	< 5.0		EPA 8260
84. Trichloroethene	< 5.0		EPA 8260

† Please indicate detection limit if analyte is not detected.

